

FIG. 2

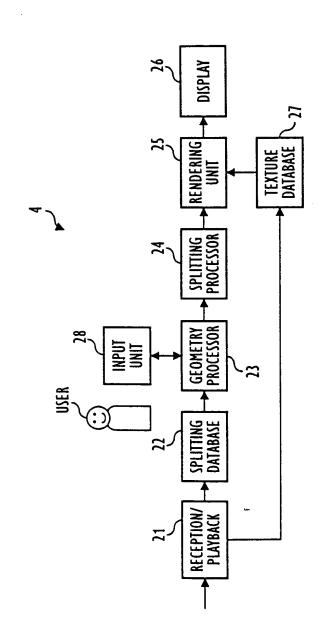
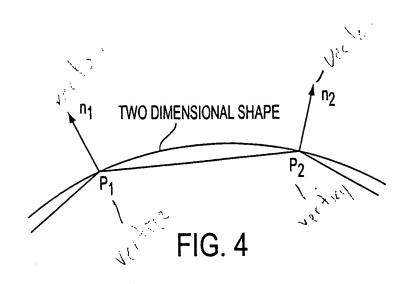


FIG. 3



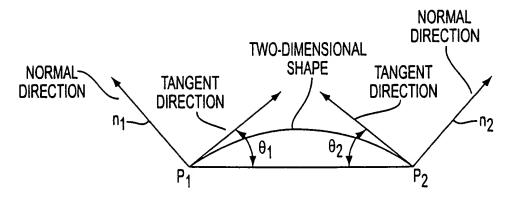


FIG. 5

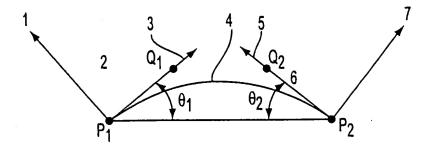


FIG. 6

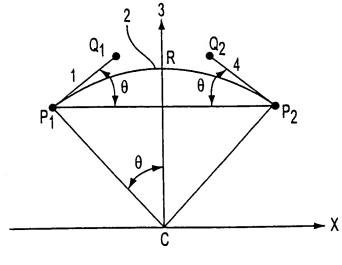
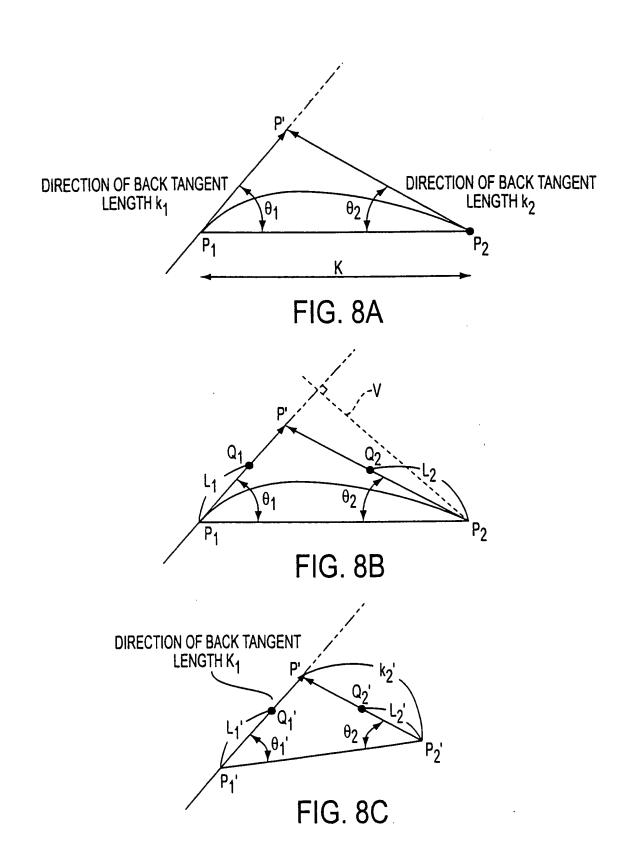


FIG. 7



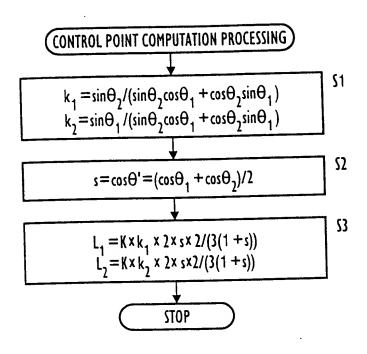
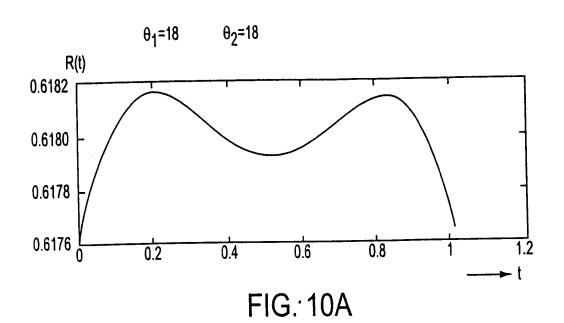


FIG. 9



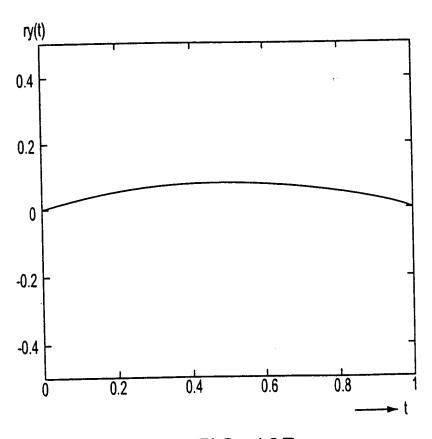
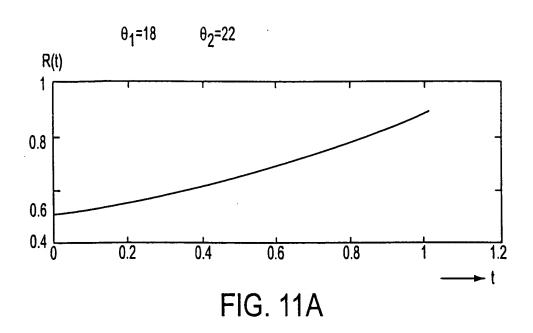


FIG. 10B



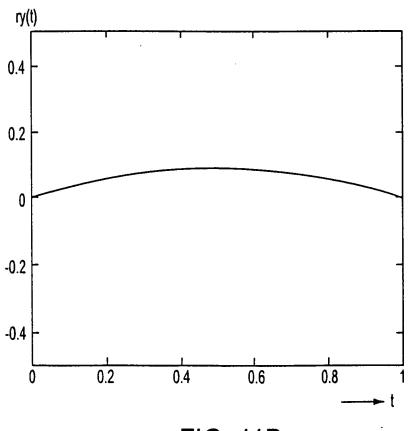


FIG. 11B

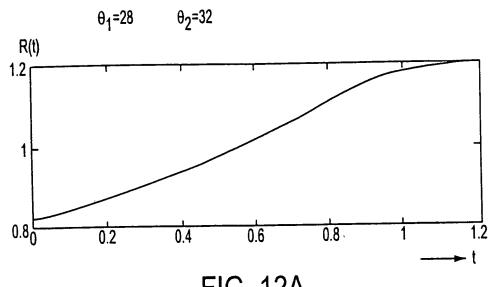


FIG. 12A

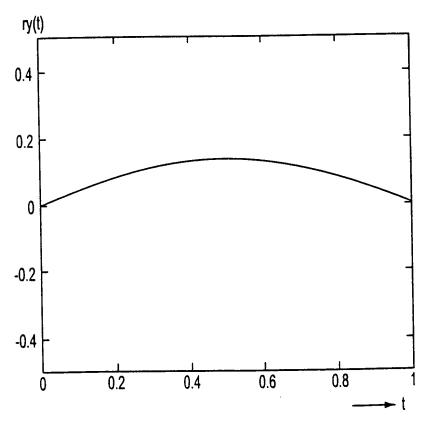


FIG. 12B

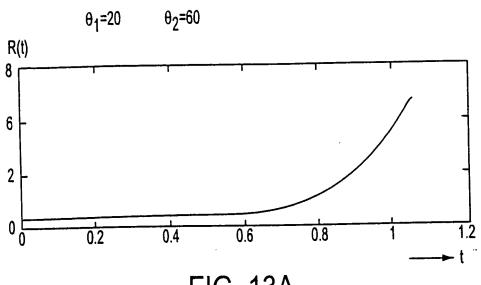


FIG. 13A

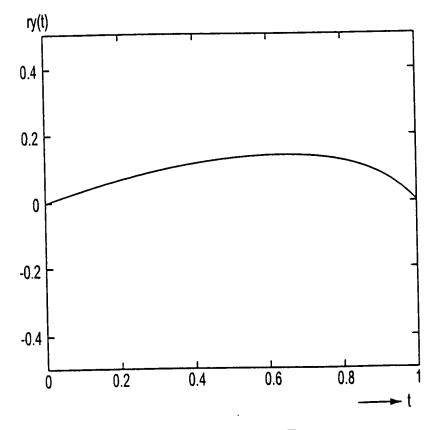
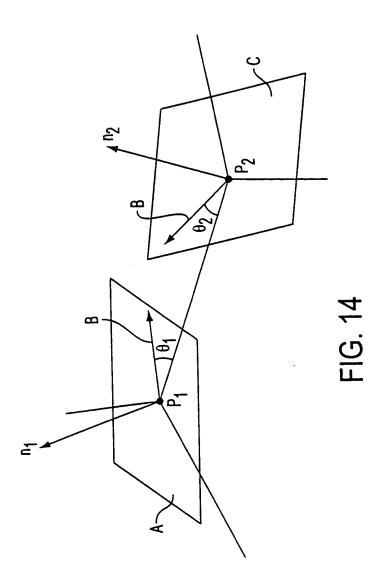


FIG. 13B.



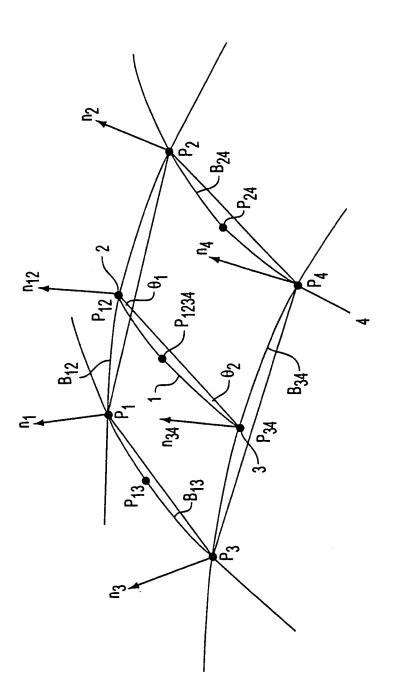


FIG. 15

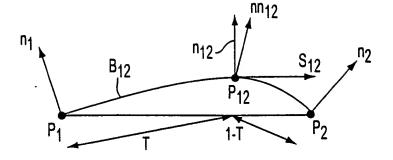
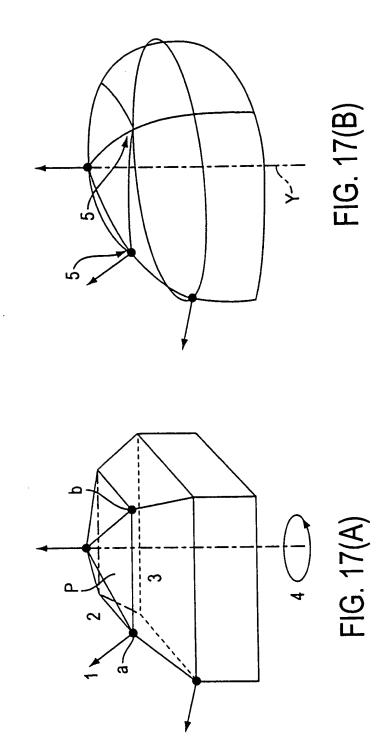


FIG. 16



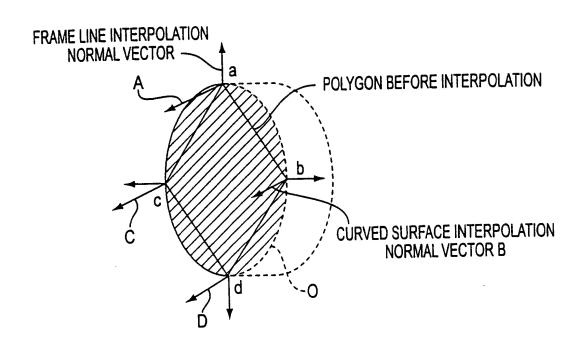
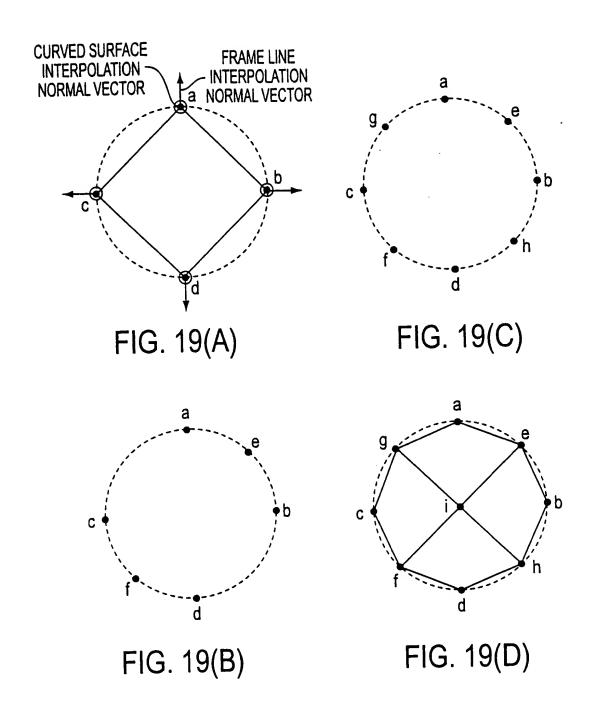
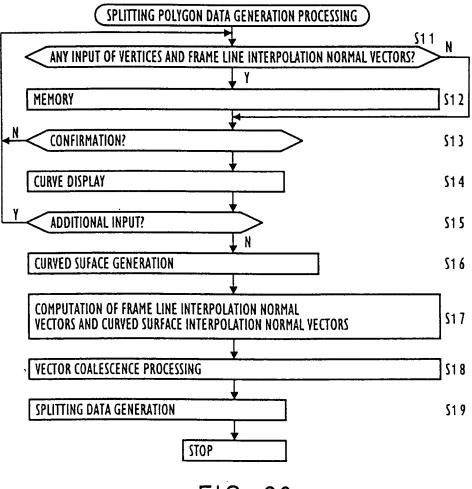


FIG. 18





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FIG. 20

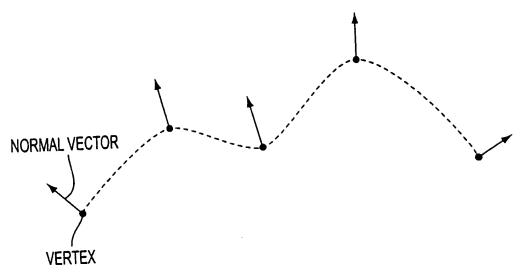
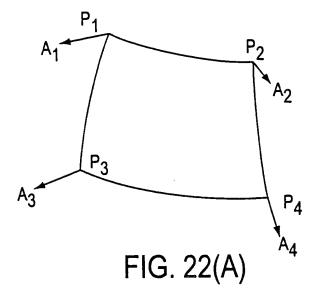
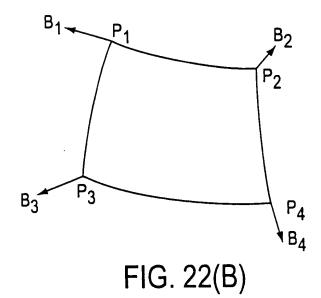
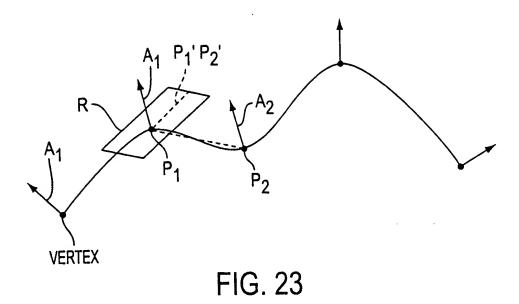


FIG. 21







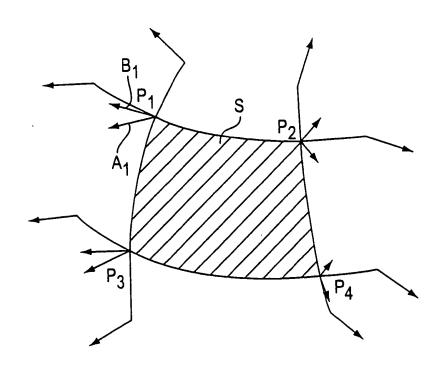
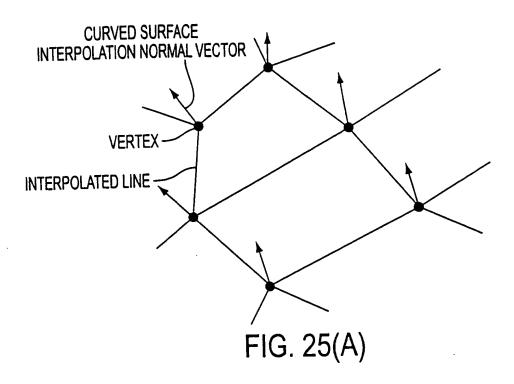
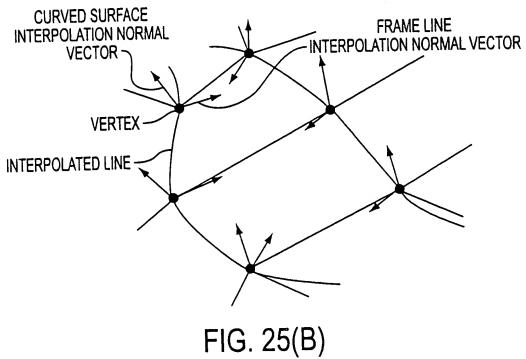
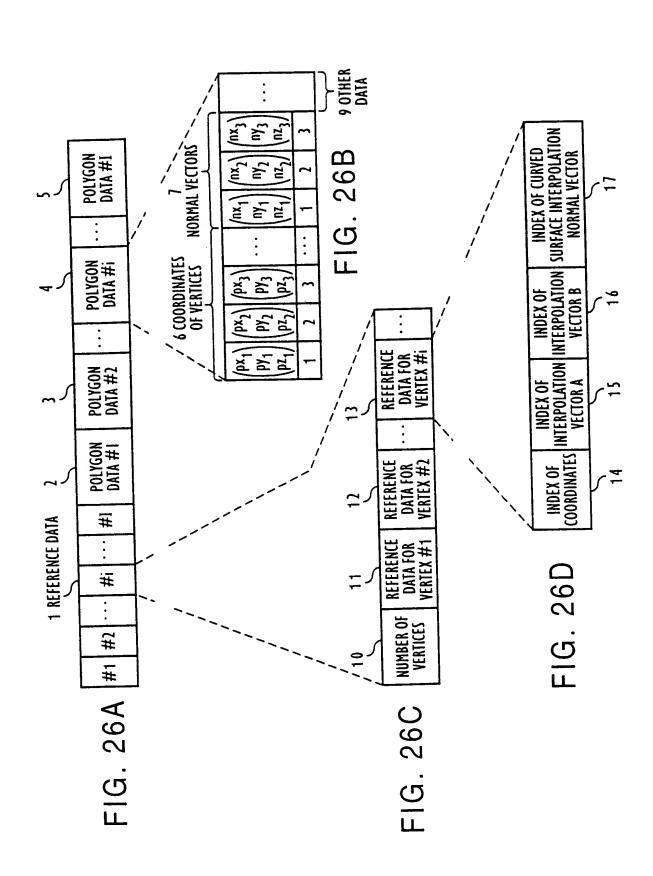


FIG. 24







## FINE SPLITTING PROCESSING

\$21:

GENERATE (M-1) INTERPOLATED VERTICES  $P_{12}$  BETWEEN  $P_1$  AND  $P_2$  AND DETERMINE CURVED SURFACE [INTERPOLATION] NORMAL VECTORS  $n_{12}$  AT INTERPOLATED VERTICES  $P_{12}$  (SPLITTING PROCESSING OF FRAME LINE  $P_1P_2$ )

**S22:** 

GENERATE (M-1) INTERPOLATED VERTICES  $P_{34}$  BETWEEN  $P_3$  AND  $P_4$  AND DETERMINE CURVED SURFACE INTERPOLATION NORMAL VECTORS AND  $n_{34}$  AT INTERPOLATED VERTICES  $P_{34}$  (SPLITTING PROCESSING OF FRAME LINE  $P_3P_4$ )

**S23**:

GENERATE (N-1) INTERPOLATED VERTICES P $_{1\,3}$  BETWEEN P $_1$  AND P $_3$  AND DETERMINE CURVED SURFACE INTERPOLATION NORMAL VECTORS  $n_{1\,3}$  AT INTERPOLATED VERTICES P $_{1\,3}$  (SPLITTING PROCESSING OF FRAME LINE P $_1$ P $_3$ )

524:

GENERATE (N-1) INTERPOLATED VERTICES  $P_{24}$  BETWEEN  $P_2$  AND  $P_4$  AND DETERMINE CURVED SURFACE INTERPOLATION NORMAL VECTORS  $n_{24}$  AT INTERPOLATED VERTICES  $P_{24}$  (SPLITTING PROCESSING OF FRAME LINE  $P_3P_4$ )

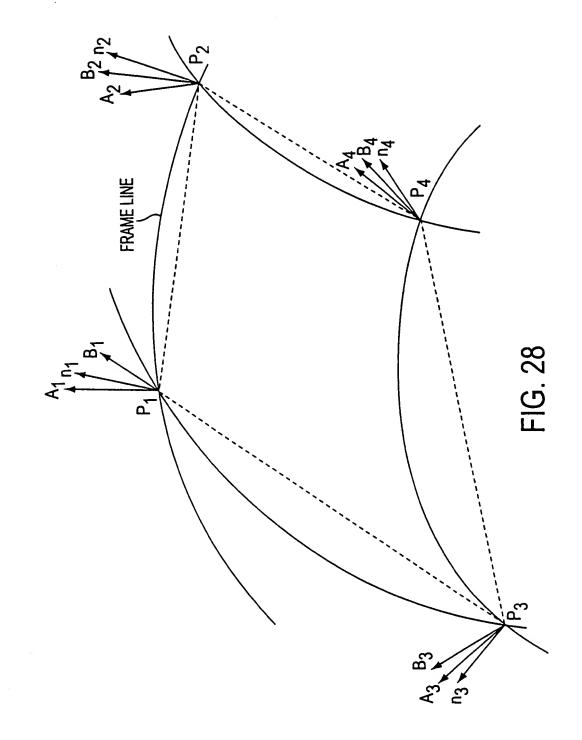
**S25**:

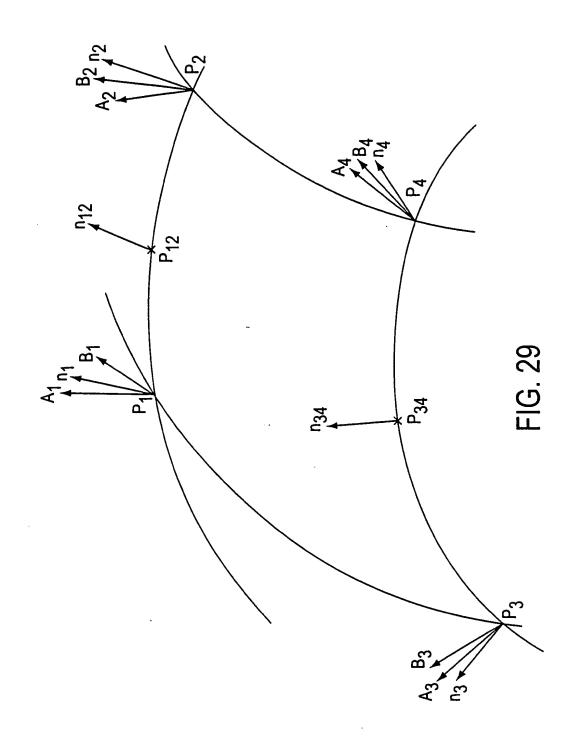
GENERATE (M-1)x(N-1) INTERPOLATED VERTICES  $P_{1\,234}$  BETWEEN  $P_{1\,2}$  AND  $P_{34}$  AND DETERMINE CURVED SURFACE INTERPOLATION NORMAL VECTORS  $n_{1\,234}$  AT INTERPOLATED VERTICES  $P_{1\,234}$ , OR GENERATE (M-1)x(N-1) INTERPOLATED VERTICES  $P_{1\,324}$  BETWEEN  $P_{1\,3}$  AND  $P_{24}$  AND DETERMINE CURVED SURFACE INTERPOLATION NORMAL VERTICES  $n_{1\,324}$  AT INTERPOLATED VERTICES  $P_{1\,324}$  (SPLITTING PROCESSING INSIDE POLYGONS)

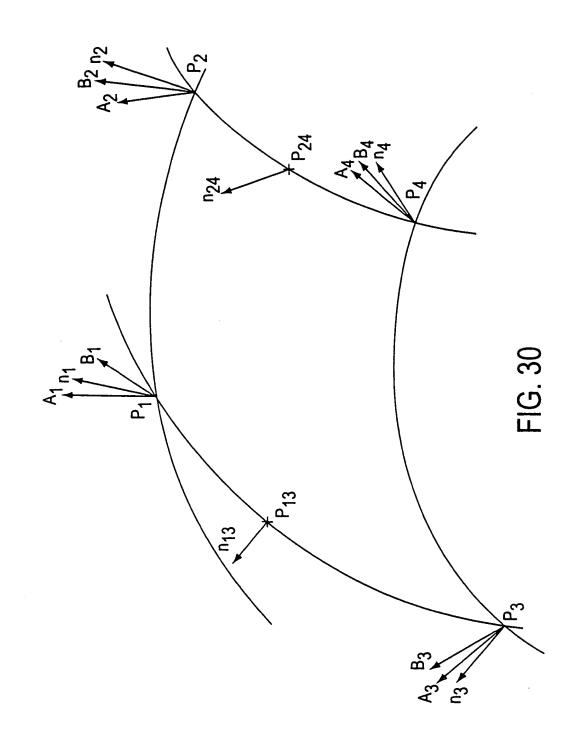
S26: POLYGON SPLITTING BY INTERPOLATED VERTICES

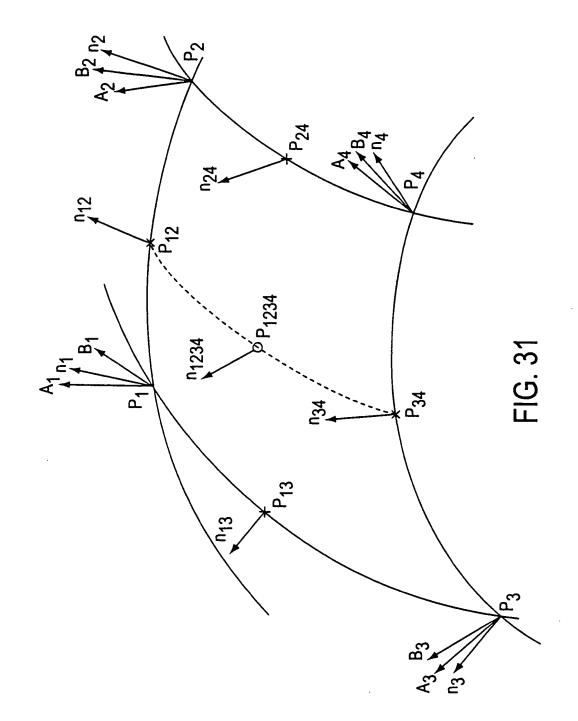
STOP

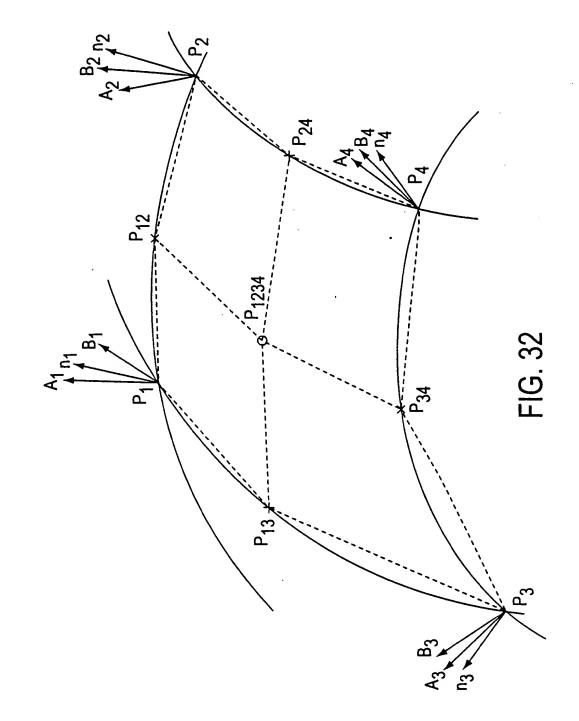
FIG. 27

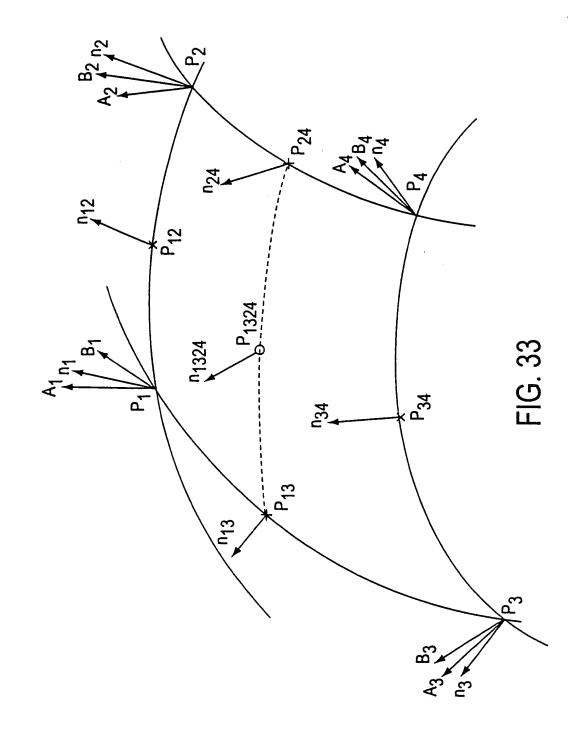












## SPLITTING PROCESSING OF FRAME LINES

S31: DETERMINE STRAIGHT LINE P<sub>1</sub>P<sub>2</sub>

**S32**:

PROJECT STRAIGHT LINE  $P_1P_2$  onto the plane that includes point  $P_1$  or  $P_2$  and is perpendicular to the frame line interpolation normal vector, and take the straight-line direction vector projected onto each plane as the tangent vector

**S33:** 

DETERMINE THE ANGLE  $\Theta_1$ , OR  $\Theta_2$  BETWEEN STRAIGHT LINE P<sub>1</sub> P<sub>2</sub> AND THE TANGENT VECTOR AT POINT P<sub>1</sub> OR P<sub>2</sub>, RESPECTIVELY

**S34**:

BASED ON  $\Theta_1$ , OR  $\Theta_2$ , DETERMINE DISTANCE L $_1$  OR L $_2$  FROM POINT P $_1$  OR P $_2$  TO BEZIER CURVE CONTROL POINT Q $_1$  OR Q $_2$ , RESPECTIVELY

**S35**:

DETERMINE CONTROL POINTS  $\mathbf{Q_1}$ ,  $\mathbf{Q_2}$  FROM THE TANGENT VECTORS AND  $\mathbf{L_1}$ ,  $\mathbf{L_2}$ 

S36:

DETERMINE INTERPOLATED VERTEX  $P_{12}$  on the bezier curve obtained from control points  $P_1$ ,  $P_2$ ,  $Q_1$ ,  $Q_2$ , and connection vector  $s_{12}$  and curve interpolation normal vector  $nn_{12}$  at interpolated vertex  $P_{12}$ 

[TRANSLATOR'S NOTE: AS SUGGESTED BY THE SPELLINGS IN \$37 BELOW AND IN THE MAIN TEXT,

"CONNECTION VECTOR \$12" IS PROBABLY A MISPRINT FOR "TANGENT VECTOR \$12", AND "CURVE

INTERPOLATION NORMAL VECTOR \$12" IS PROBABLY A MISPRINT FOR "CURVED SURFACE

INTERPOLATION NORMAL VECTOR \$12".]

**S37**:

CORRECT CURVED SURFACE INTERPOLATION NORMAL VECTOR  $\mathfrak{s}_{12}$  BY TANGENT VECTOR  $\mathfrak{s}_{12}$ 

STOP

FIG: 34

## SPLITTING PROCESSING WITHIN POLYGONS

S41: DETERMINE STRAIGHT LINE P<sub>1</sub> P<sub>2</sub>

**S42**:

PROJECT STRAIGHT LINE  $P_1P_2$  ONTO THE PLANE THAT INCLUDES POINT  $P_1$  OR  $P_2$  AND IS PERPENDICULAR TO THE CURVED SURFACE INTERPOLATION NORMAL VECTOR, AND TAKE THE STRAIGHT-LINE DIRECTION VECTOR PROJECTED ONTO EACH PLANE AS THE TANGENT VECTOR

**S43**:

DETERMINE THE ANGLE  $\theta_1$  or  $\theta_2$  between straight line P  $_1$  P  $_2$  and the tangent vector at point P  $_1$  or P  $_2$  , respectively

**S44**:

BASED ON  $\Theta_1$ , OR  $\Theta_2$ , DETERMINE DISTANCE L $_1$  OR L $_2$  FROM POINT P $_1$  OR P $_2$  TO BEZIER CURVE CONTROL POINT Q $_1$  OR Q $_2$  , RESPECTIVELY

**S45**:

DETERMINE CONTROL POINTS  $\mathbf{Q}_1$ ,  $\mathbf{Q}_2$  FROM THE TANGENT VECTORS AND  $\mathbf{L}_1$ ,  $\mathbf{L}_2$ 

546

DETERMINE INTERPOLATED VERTEX P $_{1\,2}$  on the bezier curve obtained from control points P $_1$ , P $_2$ , Q $_1$ , Q $_2$ , and connection vector  $s_{1\,2}$  and curve interpolation normal vector  $nn_{1\,2}$  at interpolated vertex P $_{1\,2}$ 

[TRANSLATOR'S NOTE: AS SUGGESTED BY THE SPELLINGS IN  $\dot{S47}$  BELOW AND IN THE MAIN TEXT, "CONNECTION VECTOR  $\dot{s}_{12}$ " IS PROBABLY A MISPRINT FOR "TANGENT VECTOR  $\dot{s}_{12}$ ", AND "CURVE INTERPOLATION NORMAL VECTOR  $\dot{n}_{12}$ " IS PROBABLY A MISPRINT FOR "CURVED SURFACE INTERPOLATION NORMAL VECTOR  $\dot{n}_{12}$ ".]

**S47**:

CORRECT CURVED SURFACE INTERPOLATION NORMAL VECTOR nn<sub>12</sub> BY TANGENT VECTOR s<sub>12</sub>

STOP

FIG. 35

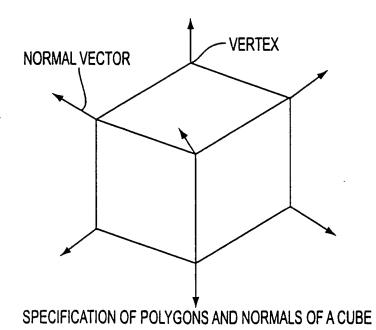


FIG. 36

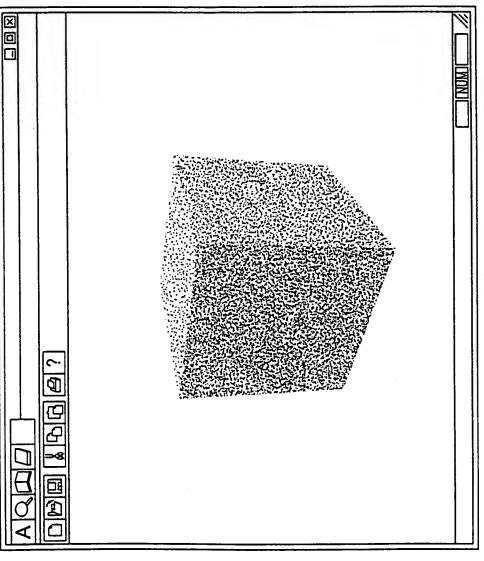


FIG. 37

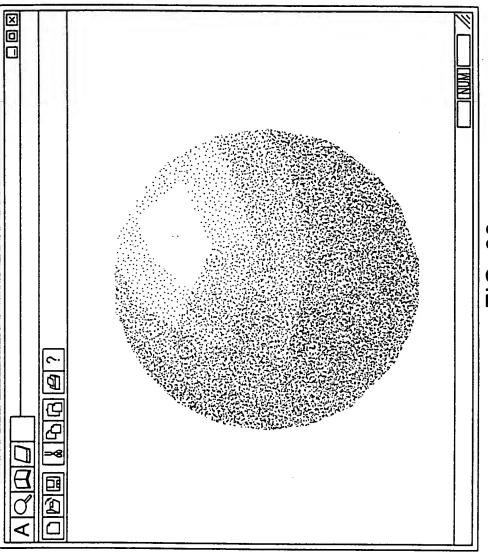


FIG. 38

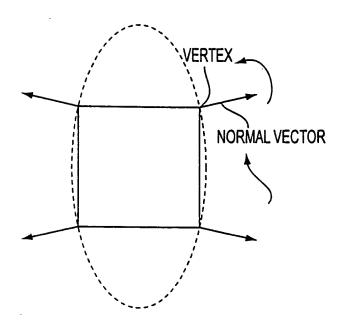


FIG. 39

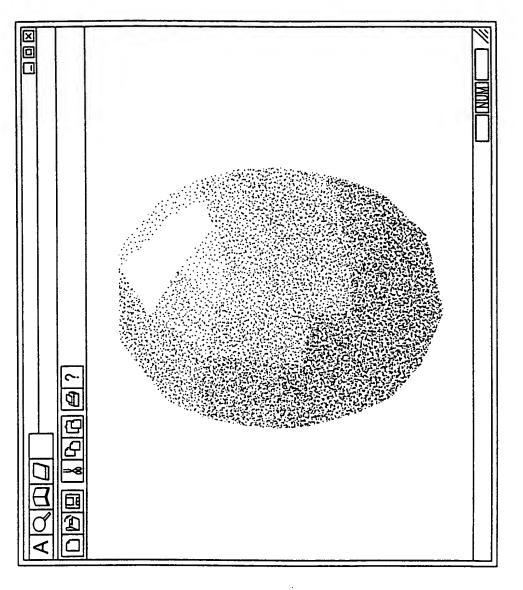


FIG. 40

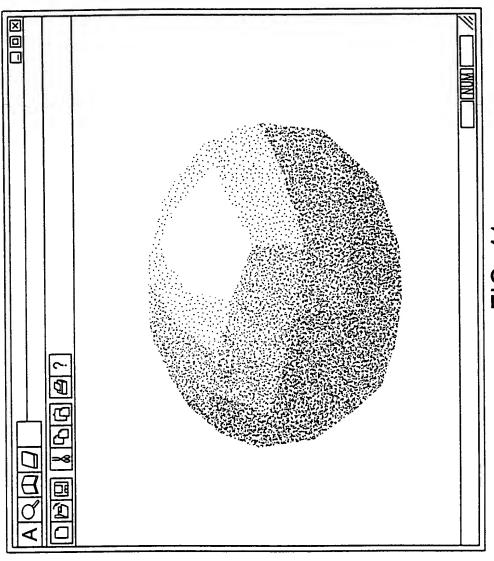


FIG. 41

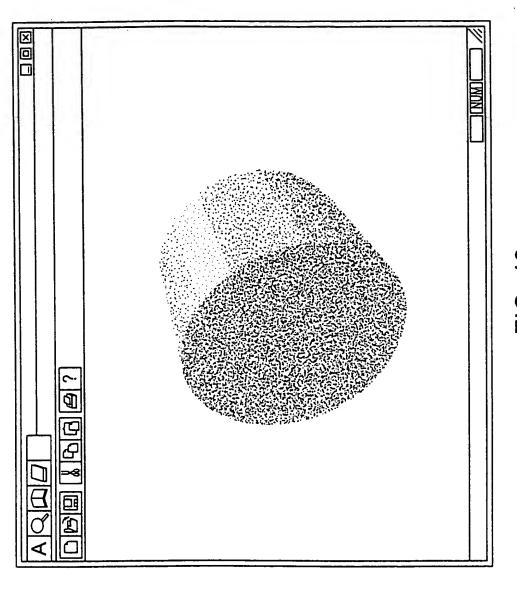


FIG. 42

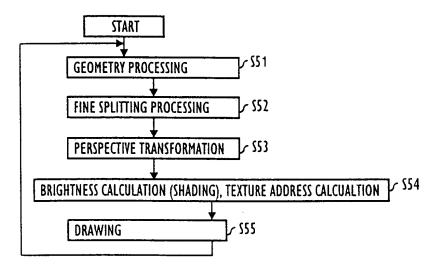


FIG. 43

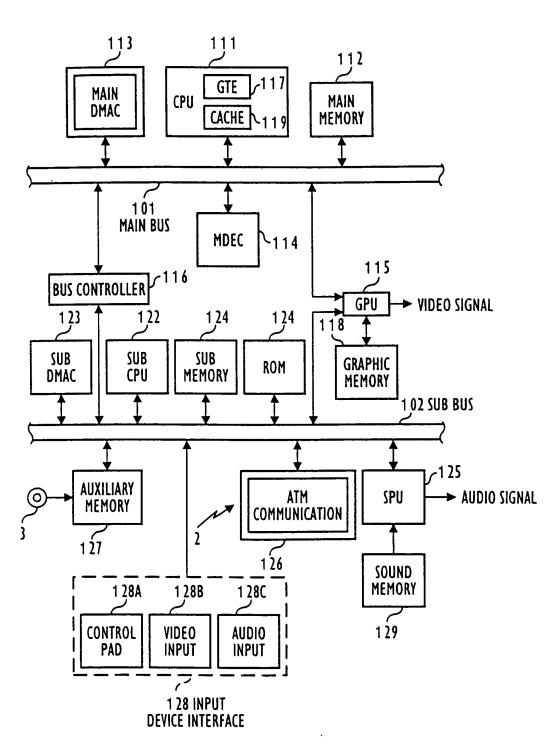


FIG. 44

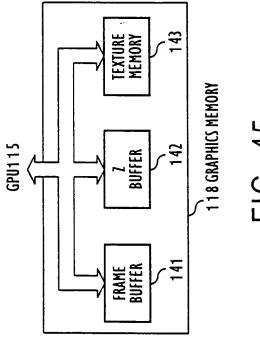


FIG. 45